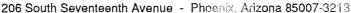


### ARIZONA DEPARTMENT OF TRANSPORTATION

### HIGHWAYS DIVISION





FIFE SYMINGTON Governor

LARRY S. BONINE Director

GARY K. ROBINSON State Engineer

March 20, 1995

### Engineering Consultants Section

### **INFORMATION BULLETIN 95-08**

TO:

**CONSULTANTS** 

FROM:

ENGINEERING CONSULTANTS SECTION

SUBJECT:

USAGE OF CORRUGATED HIGH DENSITY

POLYETHYLENE PLASTIC PIPE

Enclosed is ADOT's policy on the use of corrugated high density polyethylene plastic pipe (CHDPEPP) effective March 1, 1995. CHDPEPP will be considered a viable alternate for storm drains and pipe culverts on pipe sizes of 12 inches (300mm) to 36 (910mm).

Please contact Terry Otterness, Design Program Manager at (602) 255-7341 if there are any questions.

attachments

### ARIZONA DEPARTMENT OF TRANSPORTATION

### ROADWAY DESIGN SECTION

### OFFICE MEMO

### March 1, 1995

TO:

ALL DESIGN PERSONNEL

ROADWAY ENGINEERING GROUP, 615E

BRIDGE DRAINAGE SECTION, 613E

STATEWIDE PROJECT MANAGEMENT SECTION, 614E

LOCAL GOVERNMENT SECTION, 630E ROADSIDE DEVELOPMENT SECTION, 617E

FROM:

TERRY H. OTTERNESS - 10

Design Program Manager

Roadway Engineering Group, 615E

SUBJECT:

USAGE OF CORRUGATED HIGH DENSITY

POLYETHYLENE PLASTIC PIPE

REVISED PIPE SUMMARY SHEET

REVISED pH AND RESISTIVITY TABLE

The Materials Products Evaluation Committee (MPEC) has approved the recommendations of the Pipe Committee which is a subcommittee of MPEC. This will allow the usage of Corrugated High Density Polyethylene Plastic Pipe (CHDPEPP).

Therefore, CHDPEPP will be considered a viable alternate for storm drains and pipe culverts on pipe sizes of 12 inches (300mm) to 36 inches (910mm). All these sizes are approved for a maximum fill height of 10 feet (3m) and a minimum cover of 12 inches (300mm). This pipe can be used for all ranges of soil resistivity and pH values between 1.25 and 14.0. This high density polyethylene plastic pipe shall conform with ASTM D3350 Cell Classification of 324420C and AASHTO M294 and M252. Requirements for joints to cover water resistant and water tight conditions will be covered in revised ADOT Specifications for CHDPEPP.

The Manning's "n" values applicable to CHDPEPP for smooth pipe design will be considered equivalent to that of concrete pipe and the values for corrugated interior pipe design will be considered equal to that for steel pipes.

The Pipe Summary sheet has been updated to include the usage of CHDPEPP; please see attachment. Consultants may obtain a copy of the new drawing by bringing a blank 3.5" high density DS,HD diskette to room 105E at the Engineering Building, 205 S. 17th Avenue. Please see Bob Trujillo (255-8675) or Dean Sullinger (255-8673). The new drawing will be placed on the ADOT CADD STANDARDS at a future date. Thank you.

A copy of the revised pH and resistivity table is enclosed for your usage.

Please distribute this memo within your Group and to the consultants working under your direction. Contact Tom Scheck (255-8674) or me (255-7341) if you have any questions regarding this material.

THO:THS:tbw No. memopipe

### Attachments

District Engineers c: Ron Williams John Louis Dallis Saxton Engineering Consultants Section Utility & Railroad Engineering Section Joe Roman Pipe Subcommittee Paul Hurst Dan Lance Dennes Jensen Rod Curtis Bob Miller Gene Hansen Larry Doescher Bob Tally J.J. Liu George Lopez-Cepero FHWA

# PHOMBER TYPES OF CULMENT

### CHORVE LINISISHE TO STORY TO LOW

Luc		
***************************************	RESISTIVITY (ohm-cm)	ALLOWABLE PIPE OR COATING
<b>b4</b>	2000 or Greater	A-B-C-D-E
bd  d	1500-1999	B-C-D-E
	1000-1499	B'''-C-D-E
>!	666-009	C-D-E
>	Less than 500	J-0

### Nofes:

 Not allowed when pH is lass than 7.2.
 If the pH is outside range, pipe guage can be increased or bituminous coating applied.

## TYPES OF CULVERT PIPE OR COATING

- A) Corrugated Galvanized Steel Pipe (CGSP) and Spiral Rib Galvanized Steel Pipe (SRGSP), AASHTO M 36/M 36M and Corrugated Galvanized Steel Structural Plate Pipe (CGSSPP), AASHTO M 167/M 167M.

  The pH Range Is 6 to 9.<sup>(2)</sup>
- B) Corrugated Aluminized Steel Pipe (CASP) and Spiral Rib Aluminized Steel Pipe (SRASP), AASHTO M 36/M 36M. The pH Range is 5 to 9.
- C) Corrugated Aluminum Pipe (CAP), AASHTO M 196/M 196M and Corrugated Aluminum Structural Plate Pipe (CASPP), AASHTO M 219/M 219M.

  The pH Range is 5 to 9.
- Corrugated High Density Polyethylene Plastic Pipe, (CHDPEPP), The pH Range Is 1.25 to 14 and all Ranges of Resistivity. AASHTO M 294.  $\Omega$
- E) Bituminous Coated (A,B or C), AASHTO M 190 and AASHTO M 243.

March 1, 1995

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FILL HEIGHT RANGE TABLE (m)													
RANGE NO.		1	2	3	4	5	6	7	8	9	10	11	12
FILL	>	1	3	5	8	11	15	20	25	30	40	55	70
HEIGHT (m)	≤	3	5	8	11	15	20	25	30	40	55	70	90
$\Theta$ should field conditions vary from the range indicated, contact design for Re-evaluation of pipe design requirements.													

PIPE CORRUGATION											
Α	2 1/3 × 1/2	D	6×2								
В	3×1	-	3×1								
С	9×2 ½	-	9×2 1/2								

SHEET TOTAL NO. SHEETS STATE PROJECT NO. AS BUILT - CORRUGATED STEEL PIPE - CORRUGATED ALUMINUM PIPE 9 ARIZ. CAP - REINFORCED CONCRETE PIPE RCP NRCP NON-REINFORCED CONCRETE PIPE NRCIPCP - NON-REINFORCED CAST-IN-PLACE CONCRETE PIPE
CHDPEPP - CORRUGATED HIGH DENSITY POLYETHYLENE PLASTIC PIPE END TREATMENT REMARKS QUANTITIES 7 End Catch Basin, Manhole, Headwall Headwall & Junction Structure Sct Ś Inlet 18. Grate " Pry Ling Depression Emb # 6000 FA (F. F.) Sto CE 480-m-0140 F /&', Standord E Poo BKM to the state of th 1 4010h \$Q \(\pi\) # 02.0 F 7337777 \*\*\*\*\*\*\*\*\*\*\*\* HAVE ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
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